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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,766	11/27/2001	Takahiro Tochioka	740819-705	7593

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EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 09/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/993,766	Applicant(s) TOCHIOKA ET AL.	
	Examiner Callie E. Shosho	Art Unit 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-10 and 12-24 is/are pending in the application.
- 4a) Of the above claim(s) 8,9 and 13-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10,12 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/20/03 has been entered.

2. All outstanding rejections except for those described below are overcome by applicants' amendment filed 8/20/03.

Election/Restrictions

3. Restriction to one of the following inventions is required under 35 U.S.C. 121:
- I. Claims 1-7 and 10-12, drawn to long glass fiber filler reinforced resin material, classified in class 523, subclass 209.
 - II. Claims 8-9 and 13-16, drawn to injection molded material, classified in class 524, subclass 494.
 - III. Claims 17-18, drawn to method for molding long glass fiber filler reinforced material, classified in class 524, subclass 582.
 - IV. Claims 19-23, drawn to method for molding injection molded article, classified in class 264, subclass 297.2.

4. The inventions are distinct, each from the other because of the following reasons:

(a) Inventions I and II are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as compression molded article or extrusion molded article and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

(b) Inventions I and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the process for using the product as claimed can be practiced with another materially different product such as carbon fiber, mineral fiber, or silica reinforced resin material.

(c) Inventions IV and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by another and materially different process such as placing the resin material into a heated mold cavity, forming it by pressure, cooling the mold, and opening the mold to recover the molded article, i.e. compression molding.

(d) Inventions I and IV are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the process for using the product as claimed can be practiced with another and materially different product such as carbon fiber, mineral fiber, or silica reinforced resin material.

(e) Inventions II and III and inventions III and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions III and IV have different modes of operation and different functions. Invention IV is a process of making an injection molded article by injection molding machine while invention III is a process of using a long glass fiber reinforced resin

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material which uses heating and kneading. Additionally, the different inventions II and III have different modes of operation and functions. Invention II is an injection molded article produced by injection molding while invention III is a process of using a long glass fiber reinforced resin material which uses heating and kneading.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification and/or their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. A telephone call was made to Donald Studebaker on 2/6/02 to request an oral election to the above restriction requirement, but did not result in an election being made.

In the response filed 3/15/02 to the written restriction requirement mailed 2/15/02, applicant elected Group I, long glass fiber filler reinforced resin material, claims 1-7 and 10-12.

Applicants' election of Group I was acknowledged in the office action mailed 5/24/02. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 8-9 and 13-23 were withdrawn from further consideration by the examiner, 37 CFR 1.142(b) as being drawn to a non-elected invention. Election was made **without** traverse in the response filed 3/15/02.

It is noted that in the amendment filed 8/20/03, applicants added new claim 24 which has been joined with Group I.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 10 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 recites the "molecular weight" of the polypropylene. The scope of the claim is confusing because it is not clear what type of molecular weight this refers to - weight average, number average, etc.

Based on the examples present in the instant specification, it is clear that the molecular weight is weight average molecular weight. Thus, it is suggested that in claim 10, "molecular weight" is changed to "weight average molecular weight".

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 10, 12, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino (U.S. 5,514,745) in view of Mitsuno et al. (U.S. 5,409,991).

Yoshino discloses long glass fiber filler reinforced resin material for injection molding comprising (i) 5-70% masterbatch comprising 60-90% long glass fiber coated with silane coupling agent, polypropylene matrix resin with melt flow rate measured at 230 °C and 2.16 kg of, for instance, 200 g/10 min or 300 g/10 min, and acrylic acid or maleic anhydride modified polypropylene and (ii) 30-95% diluting polymer which is ethylene-propylene block copolymer which has melt flow rate of 3-20 g/10 min. In light of the disclosure of the melt flow rate of the polypropylene, i.e. 200 g/10 min or 300 g/10 min, and the melt flow rate of the ethylene-propylene block copolymer, i.e. 3-20 g/10 min, it is clear that the melt flow rate of the polypropylene is larger than twice the melt flow rate of the ethylene-propylene block copolymer. The material is used to form rod-shaped, i.e. elliptical, pellets which are 2-50 mm long and comprise the glass fibers in longitudinal direction (col.1, lines 43-49 and 61, col.4, lines 18-19, 29-30, 42-48, and 52-54, col.5, lines 18-26, col.6, lines 39-62, col.6, line 65-col.7, line 3, col.7, lines 37-40, col.8, lines 7 and 18-27, and col.9, lines 10-11).

Although there is no disclosure of the molecular weight of the polypropylene, given that Yoshino et al. disclose polypropylene with melt flow rate identical to that presently claimed, it is clear that the polypropylene would intrinsically possess molecular weight as presently claimed.

The difference between Yoshino and the present claimed invention is the requirement in the claims of pentad isotactic index of the polypropylene matrix resin and the propylene component of the ethylene-propylene block copolymer.

Mitsuno et al., which is drawn to thermoplastic propylene resin composition comprising glass fiber, disclose using propylene homopolymer or ethylene-propylene block copolymer wherein the propylene homopolymer and propylene component of the block copolymer each

possess pentad isotactic index of 97% or greater. The motivation for using such polymer is to produce composition with high heat resistance, stiffness, and scratch resistance (col.6, lines 30-36).

In light of the motivation for using polypropylene and ethylene-propylene block copolymer with pentad isotactic index as described above, it therefore would have been obvious to one of ordinary skill in the art to use such polypropylene and ethylene-propylene block copolymer in the long glass fiber filled resin material of Yoshino in order to produce material with high heat resistance, stiffness, and scratch resistance, and thereby arrive at the claimed invention.

Response to Arguments

13. Applicants arguments regarding Sobajima et al. (U.S. 5,484,835) and Yoshimitsu et al. (U.S. 5,792,527) have been fully considered but they are moot in view of the discontinuation of these references against the present claims.

14. Applicants' arguments filed 8/20/03 have been fully considered but, with the exception of arguments relating to Sobajima et al. and Yoshimitsu et al., they are not persuasive.

Specifically, applicants argue that:

(a) Yoshino et al. use modified polypropylene as matrix polymer not homopolypropylene as presently claimed.

(b) Yoshino et al. disclose matrix polymer with melt flow rate outside the scope of the present claims.

(c) No disclosure in Yoshino et al. of molecular weight of polypropylene.

(d) There is no disclosure in Yoshino et al. of the multiplier effect of melt flow rate and isotactic pentad index which results in molded article having extremely higher bending modulus than expected.

(e) There is no motivation to combine Yoshino et al. with Mitsuno et al.

With respect to argument (a), it is noted that col.5, lines 18-26 of Yoshino et al. disclose that the matrix polymer comprises either modified polypropylene or combination of modified polypropylene and non-modified polypropylene such as homopolypropylene. This can also be seen in col.9, wherein examples are disclosed wherein the resin material comprises both modified polypropylene, which corresponds to the presently claimed affinity providing component, and homopolypropylene.

With respect to argument (b), it is noted that col.9, lines 10-11 of Yoshino et al. disclose the use of polypropylene homopolymer which has melt flow rate of 120, 200, or 300 g/10 min which all clearly fall within the scope of the present claims.

While col.9, line 31 does disclose melt flow rate of 82 g/10 min, this appears to refer to the melt flow rate of the modified polypropylene and homopolypropylene combined. The present claims require the melt flow rate of the homopolypropylene only, which in light of the disclosure in col.9, lines 10-11 of Yoshino et al. is clearly met by the reference.

With respect to argument (c), it is agreed that there is no explicit disclosure of the molecular weight of the homopolypropylene in Yoshino et al. However, given that Yoshino et al. disclose homopolypropylene with melt flow rate identical to that presently claimed, it is clear that the homopolypropylene will intrinsically possess molecular weight as presently claimed.

With respect to argument (d), it is agreed that there is no disclosure of isotactic pentad index in Yoshino et al. However, this is the reason that Yoshino et al. is used in combination with Mitsuno et al. which teach the use of homopolypropylene which has isotactic pentad index of 97% or greater.

While there is no disclosure of the multiplier effect of melt flow rate and isotactic pentad index which results in molded article having extremely higher bending modulus than expected in either Yoshino et al. or Mitsuno et al., given that the combination of references discloses long glass fiber filler reinforced resin material with melt flow rate and isotactic pentad index identical to that presently claimed, it is clear that the resin material would intrinsically possess high bending modulus as set forth in the present invention.

With respect to argument (e), note that Mitsuno et al. is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, namely, the motivation for using polypropylene or ethylene-propylene block copolymer wherein the polypropylene possesses isotactic pentad index greater than 97% and in

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combination with the primary reference, discloses the presently claimed invention. Mitsuno et al. disclose using propylene homopolymer or ethylene-propylene block copolymer wherein the propylene homopolymer and propylene component of the block copolymer each possess pentad isotactic index of 97% or greater in order to produce composition with high heat resistance, stiffness, and scratch resistance. If the secondary reference contained all the features of the present claimed invention, it would be identical to the present claimed invention, and there would be no need for secondary references.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
9/20/03